

TECHNOLOGY TRANSITION INITIATIVE

ACCELERATING DELIVERY OF MATURE TECHNOLOGY TO THE WARFIGHTER

2005



What Is TTI?

DoD Science and Technology (S&T) Labs produce cutting-edge tools for our warfighters. However, under the current federal government's budgeting process, it often takes up to five years to get these tools out into the field. During that time, many projects either become technologically obsolete or are cancelled

due to lack of funds. The Technology Transition Initiative (TTI) was created in 2002 to fund such technology projects, enabling them to complete their development and testing phases in a timely manner and to meet all of the federal government's requirements for final funding and purchase.

TTI Criteria

- TTI Funding Accelerates Product Transition*
 - Project is from DoD S&T base (S&T Funded)*
 - Cost sharing to leverage funding* (Service /Agency up to 49%)
 - Less than 4 years TTI Funding*
 - Supports Iraqi Freedom or CTTTF
 - Joint Focus
 - Value to the Warfighter (Answer the so what?)
 - Technology mature – TRL 6 or higher
 - Commitment to Acquisition/Procurement Path (e.g., funds "POM'd" or GSA Catalog item)
- * Legislative Requirements

How Does The TTI Selection Process Work?

1. The science and technology acquisition executives of each military department and Defense Agency and the commanders of the unified and specified combatant commands nominate their prioritized projects to be funded.
2. The TTI Program Manager identifies the most promising projects that meet DoD technology goals and requirements in consultation with the Technology Transition Council.
3. The TTI Program Manager and the appropriate acquisition executive share the transition cost. Service/Agency contribution can be up to 49 percent of the total project cost. A project cannot be funded for more than four years.

What Are The Currently Funded TTI Projects?

- High Altitude Performance Improvements for Global Hawk UAV
- Automatic Change Detection Software (for finding and locating landmine and Improvised Explosive Device targets)
- Low-cost, Lightweight Unitized Composite Manifolds for the Altitude Control System (ACS), of the Terminal High Altitude Area Defense (THAAD) missile (replacing current costly aluminum, machined manifold)
- SEAL Delivery Vehicle (SDV) Advanced Reconnaissance System (ARS)
- Area Secure Operations & Control (ASOCC) (software that ties together intelligence information)
- Semantic Web Network (SWN) (intelligence data mining software)
- Night Vision Electro Optics (NVEO) Enhancements
- for the Wide Field-of-View (FOV) Goggles
- Battlefield Air Operator (BAO) Lightweight Power Generator (for the PRC-117 Field Radio)
- Advanced Lightweight Ceramic Armor
- Medical Scancorder
- Digital Planning Tools for Joint Ground Warfare
- Two-way Capability for the SOF Virtual Interpreter
- Rugged Embedded National Tactical Receiver (circuit card and software for low-cost, low-power, near-real-time, intelligence data reception capability)
- SOF Lightweight Photovoltaic Textile Solutions (for unique power generating systems)

High Altitude Performance Improvements for Global Hawk

Objective:

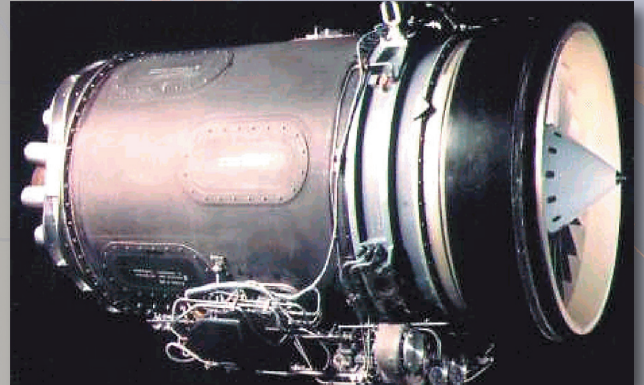
The Air Force proposed high altitude testing of a newly developed 75 kw generator on the Global Hawk (GH) AE3007H engine. It aims to verify new generator/engine compatibility, performance, and electrical power output at operating altitude, and, as a precursor to a follow-on program, address manufacturing, reliability and maintainability issues. Increased power allows GH to support planned payloads, communication systems and future threshold sensor/radar requirements that cannot be supported with the existing power system.

Participants:

Defense S&T Source: Air Force Research Lab (AFRL)

Procurement Activity: Global Hawk Systems Group

Contractors: Rolls-Royce/Allison Advanced Development Co., IN; Northrop Grumman Integrated Systems, CA; & Innovative Power Solutions LLC, NJ

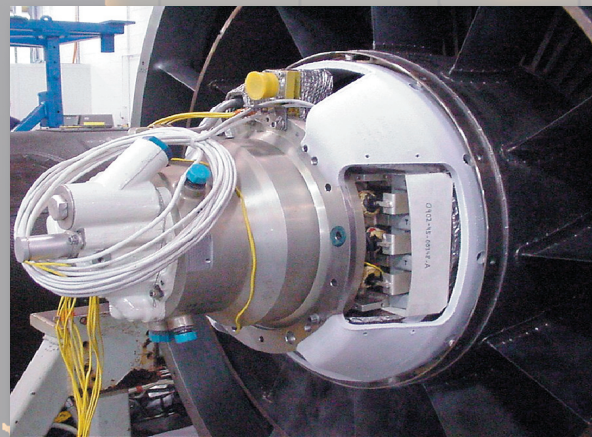


Schedule:

FY04: Stand-alone altitude test of LP Generator; revisions to AE 3007 Engine/ Generator Interface

FY05: Install LP Generator on AE 3007H and perform calibration runs; ship engine-generator set to AEDC and perform altitude tests

FY06: Planned integration onto Global Hawk



Technology:

High-altitude operations present unique challenges for turbine engines. As altitude increases, engine efficiency decreases, and less horsepower can be applied to power generation. This technology uses an innovative concept of power extraction from the low-pressure spool of a turbine engine for increased efficiency at high altitudes. The focus is on providing GH with 75 kw of electrical power at high altitude (65K feet)—triple the current onboard power capability.

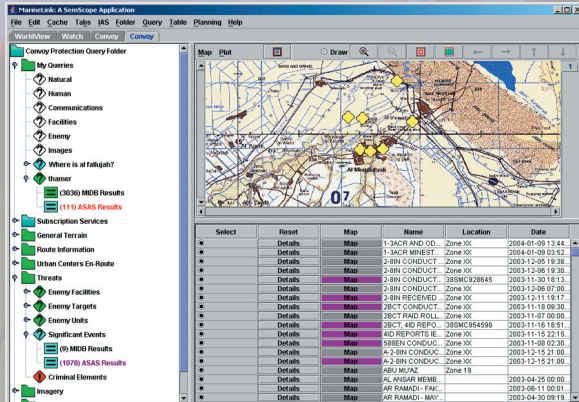
Products:

High-altitude tested 75 kw electric generator prototype for the Global Hawk AE3007H turbine engine. Planned follow-on includes aircraft integration, production, and retrofit.

Semantic Web Network

Objective:

Integrate the Semantic Web Network (SWN) technology into MarineLink, part of the USMC's Intelligence Analysis System, for use as a data mining tool.



Participants:

Defense S&T Source: \$2M from NGA/Nat'l Tech Alliance, Office of Naval Research, Assistant Director for Central Intelligence/Analysis & Production and Marine Corp Intelligence Activity. NGA/NTA is overseeing this effort

Funding Source: USMC (MARCORSYSCOM), Program Management-Intelligence—included in the USMC/PM Intelligence FY08 budget

Procurement Activity: NAVAIR will procure new ERIP compressors and NAVICP will procure replacement blades

Contractors: General Electric Aircraft Engines, MA; and MPT, Canada

Schedule:

FY04: Initial deployment to support Marine Expeditionary Forces (MEF) in Iraq. Quarterly software updates. Developed C2PC overlay for mapping in real-time.

FY05: Enhance integration Global Command & Control System (GCCS) by fielding SWN capability to all applicable MEFs.

FY06: Operational/transition support.

Technology:

SWN's XML tag-based content routing system enhances Command and Control by delivering more relevant and complete information across the intelligence community's databases in real-time. Eliminates 4-5 hours of manual data mining from various intelligence databases. This capability was tested extensively during the Joint Warrior Interoperability Demonstration in June 2003. TTI funding enabled this technology to be fielded two years ahead of schedule.

Products:

Approximately 100 intelligence analysts currently use the system in theatre.

Wide Field-of-View Goggles (WFOV)

Objective:

The Special Operations Forces need a night-vision device that has increased range, magnification, wider field-of-view (FOV), and increased sensitivity and resolution to operate in both good and restricted visibility conditions. Night Vision & Electronic Sensors Directorate (NVESD) created a goggle design that will reduce blooming (starburst effect created when light hits the lens), increase system sensitivity, and increase FOV to 40 degrees. The US Special Operations Command (USSOCOM) proposed to purchase the final production configuration prototype wide field-of-view goggles and to use TTI funding to bridge the gap between S&T funding and procurement in POM-06.

Participants:

Development Agency: Army Night Vision & Electronic Sensors Directorate

Defense S&T Source: USSOCOM Special Operations Special
Technology Program

Procurement Activity: USSOCOM PEO Special Programs

Schedule:

FY 2004: Complete Product/Process Development.

FY 2005: Milestone B.

FY 2006: Production.

Technology:

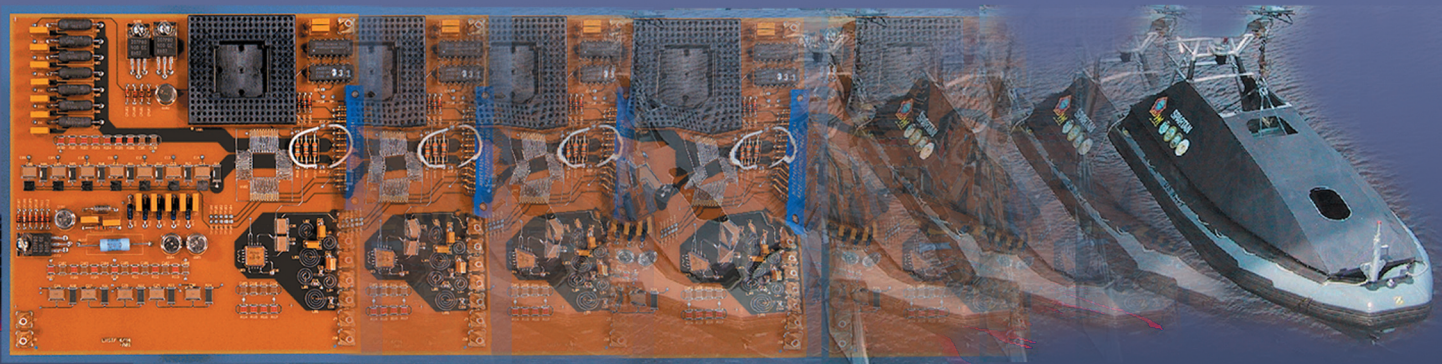
Improves operator night vision/situation awareness by increasing Night Vision Goggles (NVG) sensitivity and FOV, while reducing blooming. Developed a two-tube 70° X 55° FOV goggle utilizing pacing technology in large-element molded glass asphere lenses. Uses standard image intensifier production-ready components for maximum performance, availability, and producibility.

Products:

Funding will be used to build eight prototypes demonstrating the ability to meet objectives:

- weight (1.594lbs/725g), and
- unit production cost of \$8,500 each.





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